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EDITORIAL

Are We Ready for Peace?

Are we ready for the peace which will come sooner or later and may come sooner than many of us expect? That is a question we have been asked many times in recent weeks and we are compelled to answer in the negative.

One of the big troubles as we see it in Canada is that we rely too much on the judgment of others. Some one else has to point the way. Canada was slow in realizing the tremendous effort necessary to win the war. Once she did see it the effort was and is tremendous, much as some of us like to belittle our war effort.

Now we appear to be awaiting a lead in the matter of preparing for peace. True we have the Dr. Marsh Plan, which in itself is a very laudable thing, but we require much more than that.

We require preparations to continue full time employment for our people after the war just as, in war, we require preparations for the reconversion of industry and business from a war footing to a peace footing and we need these plans now, not after peace has been won.

We require more than that, we require a definite, solid and commonsense labor policy and it should be fair to both labor and industry, not dependent on how it will affect votes at the next election.

Now there may be some preparations along these lines but if there are, we haven't seen any evidence of it and we doubt very much if any real concrete plans have been laid or even given anything like the consideration they deserve.

It is all very well to say that we must confine our efforts at present to the winning of the war but if we win the war and lose the peace, of what use will be the winning of the war?

Far too many people seem to think that if we win the war everything will be rosy, but that is too big a chance to take.

We won the last war but we failed to make any real preparations for peace and look where we landed.

After all the troubles of pre-war years and all the troubles of the war years we cannot afford to take chances this time.

Without diminishing our efforts to win the war, we can devote some real time and talent to the preparation for peace and the sooner we plan the better for all concerned.

Across the Secretary's Desk

Since the last issue there have been few developments calling for comment in this corner.

There have been the spring examinations with a total number writing far in excess of any previous year and there have been also, of course, details to be worked out in connection with the Annual Meeting of the Society to be held at Windsor, Ontario, on June 18 and 19.

There have been two visitors to the office that I think are worthy of mention. One was W. J. McCreight of the Ottawa chapter who dropped in late one afternoon and we had quite a chat.

The other was a Student member of the Hamilton chapter by name Ira F. Gilmore, now in the R.C.A.F. and recently stationed at Souris, Manitoba. He was on leave for a few days prior to being transferred to Vancouver.

It is always a real pleasure to have a visit from Ira who never fails to drop in to see me whenever he is in the vicinity and I can assure you, I appreciate his visits more than I can say.

He seems to be enjoying life in the R.C.A.F. and is not neglecting his studies either.

He informs that he sends in one assignment every week, which is good going for a fellow in the services.

Had a letter from Jack Irving of the Vancouver chapter a few days ago. Jack has been very busy with the Hedlund's Basketball team but he still retains his real interest in the chapter and before long we hope to have everything on a real sound footing out there.

As already stated, the annual meeting of the Society will be held this year at Windsor, Ontario, as per official notice on another page.

The date is June 18 and 19 and I hope to see many of you there.

—R.D.

Chapter Notes

Kitchener Chapter.

The closing meeting of the Kitchener chapter was held at the Walper House Hotel on Wednesday, May 19, and was well attended.

The speaker was Mr. A. G. Howey of Hamilton who addressed the members on Budgetary Control, always a good subject. At the conclusion of a splendid address the members held the floor for a considerable period in a discussion of the points brought out by Mr. Howey and altogether it was a fine meeting.

Mr. Howey will be welcomed back at any time he cares to return to the Kitchener chapter.

Niagara Chapter.

The Niagara chapter will hold a final meeting for the season on Wednesday, June 3rd, at the Welland House Hotel, St. Catharines. This will be in the nature of a Social Evening and although complete details have not been settled at this time, it promises to be a huge success.

Windsor Chapter.

The Windsor Chapter held a most successful meeting at the Norton Palmer Hotel on April 29th. This was a joint meeting with the Detroit chapter of the N.A.C.A. and there was a fine attendance to hear Mr. J. Kent Devers, of the Hudson Motor Car Company, speak on "Burden Distribution." It was a really fine evening.

Literature Received

The Art of Cost Controlling.

Federal Accountant, March, 1943.

An extremely well written and informative article which should be helpful to all Cost Accountants.

Application of Standards to the Aircraft Industry.

N.A.C.A., April 15.

An article which describes the real strides made in costing in an industry which presents many difficulties.

Expenditures.

Practice in Accounting for Non-Recurring Expenditures Arising from Wartime Production.

N.A.C.A., April 15.

This is the second of three research reports published by the N.A.C.A.

Practice in Depreciating and Amortizing Investment in Machinery and Equipment.

N.A.C.A., May 1.

This is the third and last of the research series published by the N.A.C.A.

Problems in the Funding of Tax and Other Reserves.

N.A.C.A., May 1.

A most ably written article which should make good reading for all Accountants.

New Members

Toronto Chapter. ....

Morris Altman, Benjamin Pape & Company, Toronto.

T. G. Ballantyne, Rutherford Williamson & Company, Toronto.

W. D. Walton, Treasury-Cost Division, Dept. of Munitions and Supply, Oshawa.

C. W. Leask, C.A., B.A., Treasury-Cost Division, D. M. & S., Toronto.

W. H. Huck, C.A., Treasury-Cost Division, D. M. & S., Toronto.

T. M. Moran, Stevenson & Kellogg Ltd., Toronto.

F. C. Parfett, Canadian Line Materials Ltd., Toronto.

F. B. Thickett, The Nestle-Le Mur Co. (Canada) Ltd., Toronto.

Windsor Chapter.

J. L. Radigan, John Wyeth & Brother (Can.) Ltd., Windsor.

D. W. McLean, Canadian Motor Lamp Co. Ltd., Windsor.
J. Archibald, Hiram Walker & Sons Ltd., Walkerville.
J. H. France, Canadian Motor Lamp Co. Ltd., Windsor.

Montreal Chapter.

J. O. Houde, Shawinigan Engineering Co., Ltd., Montreal.
D. Clairoux, C.A., Anderson & Valiquette, Montreal.
E. MacLaine, Can. Car & Foundry Co. Ltd., Montreal.

Hamilton Chapter.

J. C. Clancy, Dept. of Natl. Revenue, Income Tax Branch, Hamilton.
W. W. Cottrell, Dept. of Natl. Revenue, Income Tax Branch, Hamilton.

Non-Resident.

H. Wagner, Roe Farms Milling Co., Atwood, Ont.
E. R. W. Miller, Kingston, Jamaica, B.W.I.

London Chapter.

V. C. Davis, Canadian Oil Companies, London.

Last month Mr. F. A. Douglas was listed as being employed by Central Aircraft Ltd. This was an error. The firm name should be McCormack's Ltd., London.

Non-Resident.

H. E. Dane, Otaco Ltd., Orillia, Ont.
H. Wagner, Roe Farms Milling Co., Atwood, Ont.

Annual Meeting of the Society

Take notice that the Annual Meeting of the Canadian Society of Cost Accountants and Industrial Engineers will be held at 8 P.M. on Friday, June 18 next, at the Norton Palmer Hotel, Windsor, Ontario, for the purpose of:

Receiving the Report of the President and Directors;
Receiving the Report of the Treasurer;
Receiving the Report of the Secretary Manager;
Receiving the Report of the Committee on By-Laws,
Election of Directors.

and for the transaction of such other business as may properly come before the meeting.

A meeting of the outgoing Directors will be held at 4 P.M. on the afternoon of June 18 at the Norton Palmer Hotel and a meeting of the new Directors will be held at the Norton Palmer Hotel at 9:30 A.M. on the morning of Saturday, June 19.

(Signed) E. R. HUTCHINSON,
Hon. Secretary.

Annual Meeting News

In addition to the proceedings outlined above in connection with the Annual Meeting, a dinner will be held on the evening of Friday, June 18th, followed by an address given by Mr. R. W. Peden of The Bundy Tubing

Company, Detroit, Mich., U.S.A. Subject: "The Calculation of Production Standards and Their Use in Cost Accounting, Pricing and Labor Relations."

At the conclusion of Mr. Peden's talk the Annual Meeting will convene, followed by a reception to the visiting delegates by the Windsor chapter.

Following the meeting of directors on Saturday morning, a Golf Tournament has been arranged by the Windsor Chapter at the Lakewood Golf and Country Club and after that a closing dinner. The Windsor chapter directors are going to considerable trouble in an effort to make the whole gathering one to be long remembered, and it is sincerely hoped that a large number of delegates will be on hand.

General Observations Concerning Cost Investigation Procedure

By HARRY E. CLAYTON, C.A., R.I.A.

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Now that the public auditor is being asked to aid the war effort by undertaking to verify, on behalf of the Dominion Government, the cost submissions of some of the sub-contractors engaged in war work, the subject of Cost Accounting and its verifications is becoming increasingly important.

A cost investigation, like any other investigation, differs from a regular detailed or balance sheet audit in that the work being undertaken resolves itself primarily into an examination of a specific phase of the contractor's accounts and records, rather than a detailed over-all verification. As soon as the auditor has secured his appointment, he should immediately endeavour to familiarize himself with the contract or acceptances of tender, etc., to be investigated, paying particular attention to the conditions contained therein relating to the determination of costs. Since the audit of sub-contracts by public auditors is being made in accordance with the authority granted under Order-in-Council P.C. 455 dated January 24, 1942, which states "That every such detailed statement shall be made up in conformity with such instructions as the Chief Cost Accountant for the Department of Munitions and Supply shall issue for such purpose and shall be accompanied by such documents, certificates and (or) other records as the Chief Cost Accountant shall require," the investigator should carefully peruse the Audit Instructions, Cost Audit Questionnaire and M. & S. 433 issued by the Chief Cost Accountant, before making any attempt to begin his actual investigation. In this connection it should be noted that M. & S. 433 excludes all of the following items as elements of cost:—

1. Allowances for interest on invested capital, bonds, debentures, bank or other loans.
2. Entertainment expenses.
3. Dues and other memberships, other than regular trade associations.
4. Donations, other than normal contributions to local charities.
5. Losses on other contracts.
6. Losses from sale or exchange of capital assets.

7. Depreciation on buildings, machinery, or equipment paid for by the Crown.
8. Fines and penalties.
9. Amortization of unrealized appreciation of values of assets.
10. Expenses, maintenance and, (or) depreciation of excess facilities.
11. Increase in reserves for contingencies, repairs, compensation insurance, and guaranteed work.
12. Federal and provincial income, excess profits, or surtaxes.
13. Unreasonable compensation for officers and employees.
14. Bond discount or finance charges.
15. Premiums for life insurance on the lives of officers.
16. Legal and accounting fees in connection with re-organizations, security issues, or capital stock issues.
17. Losses on investments, bad debts and expenses of collection.
18. Advertising and selling expenses.
19. Royalties not directly chargeable to the subject of the contract.

The cost auditor's first task upon reaching the contractor's establishment is to make a brief examination of both the plant and product to be costed. The background so acquired will repay the investigator ten-fold for the time thus spent, as it will aid him in forming general opinions when he begins his verification as to whether the contractors' cost allocations are equitable.

Of course, during the auditor's actual investigation he will of necessity make recurring visits to certain sections of the plant in order to substantiate the costs as recorded in the books of account.

Having completed his review of the concern's plant and product, the investigator should proceed to analyze the general accounting procedure and hence the system of internal check, in order to

(a) Determine the general extent of detailed examination necessary to substantiate the accuracy of the costs under review, and

(b) Ascertain the weak links, if any, in the aforementioned system so that all costs originating or passing through such sources can be carefully investigated. Even though the accountant may be satisfied with the manufacturer's general accounting procedure and system of internal check, he must, of course, make actual test checks of the accounting records and related data for several periods within the scope of the cost investigation, in order to substantiate the fact that the contractor was maintaining the same procedure throughout the entire organization for the whole period under review.

Having completed the foregoing to his entire satisfaction, the investigator may now turn his efforts to the verifification of the costs related to the specific war product or products under investigation. As the auditor will be expected to submit, in his certified report, the costs duly segregated, it is essential that he proceed with both his actual audit verification and compilation of working papers for each specific cost element separately. As it is not my intention to deal with ordinary routine auditing procedures or practices, I will confine myself to a few brief remarks relative to each of the elements of cost which are worthy of further consideration.

With regard to material costs, it is essential that the amount of all duties and taxes included therein be duly noted in the auditors report, as

quite often the costs submitted are used for the purpose of settlement with other allied governments who have been purchasing through the Department of Munitions and Supply. Furthermore, the Dominion Government, generally speaking, arranges to bill such allied governments for costs exclusive of the aforementioned duties and taxes, as these are not in reality a net cost to the Canadian Government. Consequently when no notation is made as to the amount of same which is included in the material cost, it must of necessity be assumed that it is non-existent, and if that is not actually the case, some allied government may be penalized. However, when an allied government does not purchase through the Department of Munitions and Supply, but becomes a direct party to the contract, all duties are, of course, subject to drawback regulations, and the investigator must accordingly take adequate precautions to see that the material costs are duly credited with all direct and indirect duty drawbacks received or receivable.

Where material costs are accumulated and charged against a contract by job orders or dockets, rather than on the basis of actual specifications, it is essential that the cost auditor substantiate the total material so charged by developing an average specification cost and multiplying it by the number of good units produced, plus actual rejects. Regardless of the method used, the investigator should ascertain that material costs have been duly reduced by an adequate credit for all rejected units and process scrap. In this connection, a cross-check should be made by determining the difference between the gross and net weights of the good production, plus the gross weight of rejects, and multiplying the result by the market values at the time of production of the various types of scrap. Note that the weights should be obtained from the actual specifications or engineering releases, and that the number of units of good and rejected production should be secured from the concern's approved production reports and shipping records. It has been found that in both large and small concerns too great a reliance cannot be placed upon the material content of a company's specifications which are used for costing purposes, as it occasionally occurs that modifications may be made in the specifications without the actual recording of same. Consequently, it is imperative that the investigator physically check some of the component parts and their weights to the specifications in order to substantiate their accuracy. This is one function which might possibly be overlooked, as it is not generally necessary to follow such a procedure during the course of ordinary auditing practice.

The investigation of labour costs, is, of course, conducted along standard auditing lines, with the exception that greater stress must be given to the determination of the distribution between direct and indirect labour costs, as the latter is an overhead item. This is of particular importance when the manufacturing costs are distributed on a direct labour basis or some base factor in which direct labour is included. Naturally, a scrutiny of the company's entire labour set-up must be made in order to ascertain that the segregation between direct and indirect labour is relative throughout the entire organization. For example, if certain handling costs relative to feeding materials into productive machines are charged to direct labour on government orders, the same segregation must, of course, be followed in the company's commercial practice. This is of particular importance if overhead is to be distributed on a direct labour basis, otherwise the overhead applic-

able to government orders would be overstated with the converse applying to the companys' commercial work.

The cost auditor should be on the alert to see where a concern is producing both commercial and war products and distributing overhead on a direct labour basis that the overtime premium portion of the direct labour is not included in the base factor for the purpose of overhead distribution, as this procedure might result in an inequitable allocation of overhead to specific products. For example, let us suppose that products "A" and "B" both of which are put through the same manufacturing operations in approximately the same time, cannot be produced simultaneously due to the small capacity of the plant. Consequently, product "A" is produced during ordinary working hours, whereas product "B" is manufactured during an overtime shift, for which the employees receive double time. It necessarily follows that generally speaking the overhead applicable to these products should be approximately the same; yet if the basis of allocation of overhead distribution is total direct labour expended (including overtime premiums) the amount of overhead allocated to product "B" would be twice as great as the amount charged to product "A". This procedure is, of course, absolutely inequitable.

The extent of audit verification necessary in connection with overhead costs is dependent, the same as any other element of cost, upon the efficiency of the concern's system of internal check. Broadly speaking, however, the investigator should proceed by comparing the overhead costs as per books with the certified audited statements, in order to satisfy himself that the accounts are in agreement with the certified report issued to the shareholders, and then deleting therefrom all expenses not allowable under M. & S. 433, or not related to the government production for the period under review. The resultant figures represent the net applicable overhead which may then be either equitably departmentalized or accumulated on an over-all basis, depending upon the particular circumstances of the case. These totals, or total, representing the net applicable overhead costs, should then be developed as a percentage of an equitable base factor or factors for the purpose of distribution to specific orders. Naturally, the investigator must substantiate the accuracy of the total amounts of the base factors as well as the amount included in the specific contract under investigation, by an adequate examination of the company's records and methods of accumulation.

Particular care should be given to the examination of all overhead repair and replacement accounts, in order to satisfy oneself that the contractor is not charging items of a capital nature to these accounts. Of course, a complete comparison of individual expense accounts by months and years should be made in order to investigate any marked fluctuations, so that these can be examined and allowed or disallowed accordingly. It is advisable to segregate the expenses between variable and non-variable items and develop them as a percentage of sales, so that any changes in volume will not distort comparisons.

All expenses which are not of a general overhead nature, such as the amortization of special tools, etc., should be shown as separate items in the certified report, so that the negotiating officers may

(a) Decide whether a profit on such items conforms to Government policy.
(b) Readily make cost comparisons between concerns in the same industry.

In this connection, it should be noted that the original cost of all perishable tools not covered by capital appropriations, etc., should be amortized over either

1. All known contracts upon which such tools could be used,
2. Estimated number of units the tools could produce during their expected life,

rather than being applied directly against one specific contract.

Little need be said about the development of adequate working papers, as these will be developed in conformity with usual auditing practice. However, in order to establish the uniformity and aid the senior officers of the Cost Section in reviewing the various working papers, Mr. F. E. Wood, Chief Cost Accountant, has suggested that they be indexed alphabetically as follows:—

AA Finished Papers.

BB General Data (which will include cost audit program, general notes, extracts from contracts or acceptances of tender, etc., interviews with company representatives, etc.)

A Labour.

B Material.

C Overhead.

Additional letters may be used to indicate production reports, inventory data, or other such matter as may be of substantial volume and importance. However, as these instructions have been circularized by the Cost Section to all concerned, further comment need not be made here, beyond noting that there has been somewhat of a tendency in the past to submit detailed abstracts of the company's records as part of complete working papers. However, as such information can readily be found in the contractor's books and does not constitute any verification whatsoever, it is suggested that the amount of this type of material might be considerably reduced. In short, the working papers should show:—

(a) Company figures as submitted to the investigator.

(b) Investigator's adjustments, explained in detail.

(c) Actual audit verification undertaken in order to substantiate figures submitted, and

(d) General accounting procedure and efficiency of internal check relative to the various elements of cost.

It should be noted that adequate attention must be directed in the finished report to:—

(a) Extraordinary or excessive costs.

(b) Any anticipated cost reductions—these may be due to increased production, greater efficiency in operation, or improvements in methods of processing, etc..

It is essential that the auditor state his views relative to the foregoing matters, as the negotiating officers of the Contract Department may use his report for the purpose of making firm prices on future contracts. Consequently, any circumstances which may tend to cause future fluctuations in the cost of such product should be duly noted. For example, if reject costs are high, it would seem advisable for the investigator to qualify his report "subject to the normalcy of rejects", and also to incorporate therein a full statement as to the reason for same, the amount in dollars and cents if ascertainable,

and if not—an adequate schedule of good and rejected production, coupled with his opinion as to the future trend.

In conclusion, the writer would like to point out that as Costing Memorandum M. & S. 433 has been based upon generally accepted accounting principles, it necessarily follows that the results required therefrom can be obtained by the use of any recognized cost accounting system, regardless of whether it be of a standard, process, or job cost type. No one type of cost system can be regarded as the most satisfactory, as the practicability of the system will depend upon the type of product being costed. This point is mentioned because at the present time a great many contractors are under the erroneous impression that the requirements of M. & S. 433 necessitate the operation of a job cost system.

NOTE:—The opinion expressed in the foregoing article are those of the writer, and are not necessarily endorsed by any Department of the Government.

Incentives for Worker, Salesman and Executive

An address from before The Cost and Management Institute by F. R. Manuel, Stevenson & Kellogg, Ltd., Montreal, April 9th, 1943

The subject for our consideration this evening is "Incentives for Worker, Salesman and Executive." This topic could lead us into a detailed study of plans and methods for developing and making bonus payments. We could concern ourselves with formulae, scales and the mechanical techniques of calculating financial inducements.

Valuable and necessary as these details may be, there is a necessity to understand the fundamental principles of incentives before moving into the consideration of their application. It has been our experience, repeated time and again, that frequently there is a lack of the knowledge of these principles or a misrepresentation in their application.

Your membership is representative of a variety of interests ranging from manufacturing through distribution and services to accounting and financial operations. Incentives are applicable in any of these phases, yet a critical study of techniques would be of limited interest to only a small portion of the group at any one time. Therefore, our time this evening will be spent to greater mutual advantage if we consider incentives in the broader picture and use typical applications for illustrative references only.

We must recognize that there are both financial and non-financial incentives. Indeed, he would be a poor administrator, from even the humblest straw-boss to the chief executive, who did not observe the common, everyday princpiles of human relationships.

Psychologists have classified our reactions and among those which act as incentives in our daily work are:—Pride—which expresses itself in the satisfaction of good workmanship and a job well done. Well deserved praise and commendation will spur any of us to greater efforts and create happiness and satisfaction in our work.

We all respond to a feeling of power. It may express itself in personal prowess, the creative instinct of suggestion schemes or the satisfaction of wielding authority. The thoughtful supervisor will use this trait with caution and not allow it to overplay its optimum usefulness.

Very strong in all of us is the desire for a feeling of security in the matter of personal safety and economic stability for ourselves and our dependents. But there is the danger in stressing this feature of human behaviour that it may turn to a technique of threats, resulting in control through fear—which we resent for ourselves and should discourage for others.

Then, there is the need for friends and sociability,—the desirable attitude that makes one say "they are a good crowd to work with."

Associated with the seeking for power is the development of the competitive spirit which is expressed in the effort "to beat the record." Using flexible budgets as a measurement of junior executives' results we have found a 10% improvement in performance by the stimulus of beating the record alone. Yet, when financial incentive is included that improvement has increased to 20%.

We must recognize and intelligently use the non-financial incentives. But we must also concede that they are not wholly adequate to promote the best results. An analogy comes to mind that hits pretty close to home for many of us. Golf is played against par for each hole; but many find the incentive of a few cents—or dollars—per hole increases the zest in the game and spurs them on to greater efforts.

The underlying principle of incentives is simple: It recognizes the fact that, in each one of us, interest, initiative and pride of accomplishment go hand-in-hand with authority and the knowledge that we are looked to for results. The application of a financial reward, then, brings out extra effort in any man, whether he is the average or the exception.

There are certain elemental criteria by which an incentive plan must be judged. A good scheme of financial rewards must be measured by the yardstick of sound principles.

Let us list and describe these principles briefly and then turn to their more specific application in the case of the worker, salesman and executive.

First—To be effective, financial incentives must be directly related to the effort exerted. They should be distributed to those who are responsible for the earnings—whether it be worker, management or both. If it is a group effort, then the reward should go to the group; but, if it is the result of individual effort then to the individual.

Second—The method of calculation must be simple enough to be readily and thoroughly understood by the grade of employee who receives the bonus. With understanding, to be successful, must go acceptance.

Third—The magnitude of the reward should be neither too small nor too great. This involves the setting of accurate standards for the achievement of the best over-all efficiency.

Fourth—There must be a high degree of stability in the rate of payment. For instance, probably no one factor brought piece-work into disrepute so vividly as the habit of cutting rates after earnings had exceeded a predetermined maximum.

Fifth—The standards of performance against which the results are measured must be accurately and scientifically developed. This principle is closely

related to our first—that the incentive be directly related to the effort; but it is of prime importance and deserves special note.

Sixth—The payment of financial rewards should be frequent and complete. Incidentally, infrequent payments, along with the lack of relationship to effort, constitutes the major objections to profit-sharing schemes.

Now, let us look at the application of these principles in their effect on the worker, salesman and executive. It will help our thinking and provide more comprehensive coverage if we consider two levels of the executive function—the minor executives including foremen, superintendents and heads of departments and major executives such as the President, General Manager and Treasurer.

Though, for purposes of clarity, we are going to consider each of these classifications separately, we should keep in mind the total management picture. To promote the best interests of a business one can not think of the worker, salesman and executive groups as separate entities. They are interdependent and the fact of their dependency should be kept in mind at all times in the design of an effective plan for finacial incentives.

The first principle is that financial incentives must be related directly to the effort exerted.

From the worker we want quantity and quality. Our incentive plan, therefore, should be designed to encourage his efforts to result in higher quantities of quality products.

As we suggested previously, sharing of over-all profits is not necessarily, or even remotely, associated with the amount and grade of bolts that Joe produced across the street in number 10 shop. The weather, the bond market or a change of government—all quite beyond Joe's influence—may have been the contributing factors in the profit situation.

Or again, it is doubtful if his individual bolt production contributed greatly in the showing of Shop 10 last month. The burner on the heat-treat furnace may have used twice as much oil as it should have; or they might have made up a few thousand special right-hand threads when special lefts were ordered. These shop inefficiencies should not penalize Joe's earnings.

Will we put Joe on a group bonus? He is one of ten workers all in a row performing the same operation; all working independently. We will not be rewarding his individual effort if his earnings are dependent on the group's average output.

But, if he were operating a machine, such as a press, that required a helper to feed it, Joe and his helper would be dependent on each other's efforts. In that case they would constitute a team and their incentive earnings can be calculated as a Group Bonus.

Many assembly operations fall into the group classification. If individual effort cannot be sustained by itself then a group incentive is usually the answer.

Quality is a frequent criterion of financial incentive payment. But we have noted that in the majority of cases there is a negative emphasis. Typically, management says—"Joe, we'll pay you 50 cents a hunderd for your operation on these bolts, but we won't pay for the bad ones you make." If, in his desire to roll up a good count, Joe spoils the odd bolt, he is not greatly concerned at a half cent each. Possibly his is the last operation on an

aluminum bolt; the company may lose many cents on each bolt that is spoiled at Joe's machine.

So wouldn't it be smart on our part to set a reasonable scrap allowance for that operation? Then we tell Joe that if he works carefully to reduce his scrap below that objective, we will split the saving with him. In that case each spoiled piece under a certain quantity means not half a cent but several cents each to Joe's incentive earnings. Definitely, incentives should be related to quality effort as well as quantity effort.

What do we want to achieve by the use of financial rewards to the salesman? Naturally, his job is to produce sales. Therefore, his efforts must be stimulated toward quantity of sales, and, again, quality of sales.

Quantity is related to the number of accounts he sells. Therefore, his bonus should be related to both the increased sales per outlet and the new outlets which he develops.

But, ordinarily that is not a complete yardstick. We have experienced situations where dollar volume was the only criterion and salesmen were merrily pushing the highly competitive, low profit lines where they could achieve volume without too much effort.

Profit, from the performance of a needed service, is the ultimate goal of the normal business enterprise. Therefore, we want to promote those factors in sales which contribute to profits. Those are the quality factors in this instance.

Let us consider three quality emphases in sales: The first is the assortment of products; whereby we stress the importance of the higher profit items of our output. In many instances, we use the technique of weighing the values of certain groups of products so that the calculated value, for bonus purposes, is greater for those lines in which the client desired greater sales.

A company's good-will in customer relations is maintained by a continuity of service to those customers. So we should discourage any tendency towards "high-spotting" a territory and neglect of the smaller customers by introducting an incentive factor to cover continuity of contact.

The third quality emphasis affecting profits is the expense account. Too great liberality in the handling of an expense account may off-set the profit on a considerable portion of a salesman's effort. Therefore, if excess expenses have the effect of reducing bonuses we encourage the conscientious salesman.

Though profits are influenced appreciably by selling efforts, they are not necessarily closely connected. Financial and manufacturing operations are also contributory to profits. Profit Sharing, accordingly, is not a recommended type of reward to the salesman.

Now, let us turn to the minor executive. This brings us into the foreman's bonus or key-man incentive. Management in the past few years has begun to realize the importance of foremen as front line representatives. Their function, as heads of departments, is to operate those departments as efficient, profit-making units. Therefore, the problem becomes one of isolating the factors over which he has control.

Depending on the nature of the activity involved, these factors may include labour, material and overhead in varying degrees. The criterion of

their inclusion in the standards by which bonus earnings are to be judged is the extent of the authority and responsibility of the junior executive.

For instance, we are justified in holding the foreman responsible for the amount of raw material used in his process—but not for the price at which the Purchasing Department procures the material. Or, again, if steam is used in his department, the responsibility is for the economical use of the steam; not for its cost of generation in the boiler house.

In the same way, the foreman of a manufacturing department is not responsible for the volume of work which his section is required to produce; that is the sales department's function. Therefore, we make allowances in establishing his bonus earnings, for variations in volume and the accompanying influence of fixed overhead costs.

In other words, we feel very definitely that flexible budgets and standard costs serve as the most logical yardstick for measuring the junior executive's efforts and thereby determining the extent of their financial rewards.

In the distribution of such bonus payments, it is usually good practice to recognize the dependent inter-relationships of the business. Accordingly, the bonus may be divided into three portions. The first and major share going directly to the department head; the second share into a common pool shared in by other department heads; and, the third to service employees such as maintenance, material handlers, expeditors, etc.

In previous remarks, over-all profit sharing has not been recognized as a desirable means of incentive bonuses. It has been rejected because it is not closely related to the efforts of the employee. However, when we come to the major executive, President, General Manager, Secretary, Treasurer, etc., we are considering the group whose efforts are primarily directed to the making of a profit. It is their responsibility to so conduct and guide the activities of the enterprise that a profit is earned. Therefore, their efforts are directly rewarded by an equitable plan of profit sharing.

We have, thus, dealt at considerable length with our primary principle; but it is fundamental to clear thinking in this matter of financial incentives first to be sure that the recipient is rewarded by, and stimulated to, the best performance of his own direct efforts. Now, let us look at the other phases of application.

Our second principle is that of simplicity, understanding and acceptance. For the worker, piece-work is popular, easy to understand and consequently generally and widely accepted. Payment by standard hour calculations is equally simple, and, if properly explained, readily understood. Both represent a payment of 100% of earned increment to the worker.

If we depart from this straightforward method of rewarding effort the feature of simplicity is diluted to varying degrees. Therefore, the reason, the method and degree of departure must be explained. Understanding and acceptance are made increasingly difficult to the extent to which complexity is introduced. Our financial incentive, then, is in danger of becoming weak and a certain lack of faith may exist.

Such possibilities are avoided if the reason and methods of the partial sharing are carried to, and accepted by the shop committee or union stewards —the employees' recognized representatives. Such conditions may become part of the employment contract. The foreman should be fully acquainted

with the method of calculating financial rewards, especially in the absence of any formal type of employee organization.

Simplicity loses some of its importance when we move into the sales group. Provided the scheme is not too involved, we would not expect to encounter much difficulty in its being understood. However, the rewards must be attainable and equitable, because acceptance is a prime necessity of the sales incentive—the salesman must be sold!

For the minor executive, the Foremen, Superintendents and department heads, again we do not need so much stress on simplicity. However, the expression of results against a flexible departmental budget is not difficult to interpret. True, the establishment of the elements of the budget requires experience and skill, yet its use as an operating control is relatively simple. However, the evolution of the components and the determination of the standards must be understood and agreed to by the man whose performance and reward are to be measured. Yet, simplicity of standards is sometimes easily attained. Consider, for example, the head of a bull-gang loading and unloading cars. His standard was the use of so many men per car per day. He always made a bonus because he planned to use a few less men than allowed. There was a case of extreme simplicity for the department head.

The major executive is capable, of course, of understanding even involved incentive systems. Yet since his reward is based on company profit earnings, the flexible master budget simplifies the basis of incentives, is clean-cut and operates with a minimum of differences of opinion.

Our next principle is one of general application to all the groups with which we are dealing. The magnitude of the reward should be neither too great nor too small. In general, experience has shown that bonus earnings should, and will level out between 20% and 40% over the base.

Unless the better-than-average worker can earn at least 20% reward he may not exert himself. Discouragement and dissatisfaction are the result.

On the other hand, if the earned increment exceeds 40% there is a tendency to slack off in order to safeguard against adverse adjustments of the standards. It has been rather common experience in the past few years that higher absenteeism results from abnormal earnings—either incentive or straight time earnings.

The result of a reduction of output, even though payment be on a straight unit price per piece, is to increase over-all costs because of under-absorption of fixed charges.

Our fourth criterion of good finacial incentives is stability of payment.

For the worker it has become generally accepted that standards will not be altered once they have been set. In some instances a time limit factor is used; but this is not to be recommended. It belittles confidence and demonstrates that management is none too sure of its own acts. On the other hand, labour accepts the principle that standards can be re-determined if there is a change of process or working methods.

In the salesmen and supervisory groups the stability factor is maintained over a reasonable period of time if the incentive scheme is recognized as experimental. Yet it admits of change at the end of the announced period to allow for a better and more equitable plan.

As suggested in the initial quoting of principles, the necessity of sound standards is closely associated with feature of reward for specific effort.

In fact acceptable, fair standards are a foundation on which the whole incentive structure is erected. If they are weak the principles which we have just constructed will crack and show deficiencies. Simplicity, understanding and acceptance can be made difficult—if not impossible. The magnitude of reward is directly a result of the establishment of our standards, and the patching and repair of poorly constructed bases will certainly result in lack of stability in earnings and lack of faith in management.

As an example of the importance of proper standards, may I quote one rather typical example. It has to do with a rather common form of sales incentive, namely, the computation of bonus earnings, in part, upon the increase over the preceding year's volume. A good man's performance is thus handicapped in the next year. Such a standard has a definitely negative feature in that, for any reason, a man makes a poor record in the early months of the year he is eliminated from the possibility of participating in the yearly bonus. He is, therefore, encouraged not to exert his best efforts because in so doing he would not only lose out now but would only tend to raise his bogie the following year.

The criticism, in this instance, is not of the fact that the quota is based on the previous year's performance; but rather, that the quota is built on a changing standard which is not necessarily closely related to the salesman's best efforts or the potential of the territory.

The sixth, and final, statement of principle concerns frequency and completion of payment.

The worker can not be stimulated to a day-to-day attainment of his best effort by some distant hope of reward. Our friend Joe in the bolt room is far more interested, we will find, in being able to buy an extra pair of shoes at the end of the week than a five tube radio three months hence. Generally, he and his fellows live on a pay day budget and his earnings should be complete with his regular pay period. Satisfaction and results arise more readily from a financial incentive on this basis.

In the higher brackets including the salesman, and executive, it is good policy to hold a portion of the bonus earnings in reserve. For instance, if in the case of the salesman, a fixed expense allowance is set up then any excess beyond the allowance is made to apply as a reduction against the portion of the bonus held in reserve.

Or, again, if the executive, minor or major, is rewarded for savings against a flexible budget, a reserve portion of his earnings may be set aside to be debited in the event his performance falls below standard. This technique is justified, of course, only in the event of the bonus being derived from factors over which the executive has full authority and responsibility.

However, there should be a definite cut-off point where all balances are paid off or deficits, if they exist, are cancelled and a fresh start made. The Christmas season is a good time for such settlement to be followed by fresh efforts in the New Year.

For the salesman and junior executive payment of incentive earnings should be relatively frequent, say, monthly—in order to secure the constant, continuing stimulus to maximum effort.

The major executive may be rewarded less frequently if desired. Though, if a sound basis of expectancy has been established, quarterly payments, at least, should be quite possible.

We may conclude then, that incentives for any members of the organization require thought and consideration. There are many interwoven threads which complicate the design and which make the achievement of a satisfactory pattern difficult of attainment. The fundamentals must be fully realized and each incorporated with experience and judgment. The use of consultant service will be found of value both in the development of new incentive plans and in the auditing and review of existing schemes. Experience has shown that a poorly designed incentive plan may be worse than none at all in final results.

The Determination of Hospital Unit Costs

From Irish Accountant and Secretary,

By E. W. RADCLIFFE GRACE, A.I.C.A., A.A.I.S., A.C.A.A.

With the commencement of the new financial year 1942-43 starts the introduction of a standard system of financial accounting in Victorian public hospitals which is designed ultimately with the objective of creating a system of costing which would be standard to all institutions and already some idea of the scheme has been announced.

It is proposed, quoting the words of the Charities Board of Victoria, to "show the cost of each treatment 'unit' of these departments and, finally, the average cost per occupied bed and outpatient treatment."

As the system is in its preparatory stages discussion on these objects can be profitably engaged in by those interested. The writer feels that a hospital cannot be effectively reduced to two cost units and, if this is done, much cost information is lost by absorption in the course of this reduction and the true importance of this information is not recognized.

Objective.

This article is to suggest what are suitable units of costs and why they should be used. The objective of any hospital cost system should be to show the cost of each treatment "unit." It is imperative that one unit would be "ward bed service" and the system should not make the treatment "unit" cost merely a step on the way to determining "average bed cost." The many deficiencies of the "average bed cost" as a unit cost have been realized by hospital secretaries for some time past. Also, both American and British opinion agree on this matter and systems produced in America in such States as New York, Pennsylvania and Connecticut considered it necessary to have more cost units than merely "average bed cost" and the "out-patient treatment cost." Anyone having read "Hospital Accounts and Financial Administration," by Stone, who is a world authority on the subject, cannot but be aware of the failings of having such cost units.

It does not require much deliberating to appreciate that "the average bed cost" must be higher in those hospitals that provide better and more extensive services, and, as these services cannot be accurately indexed for discussion and comparison by using financial figures, this basis can often be misleading. For this reason this unit of cost must be considered unsatisfactory and valueless as an objective.

Definition of Cost Terms.

It is essential that the terms used to define the various cost units should have a universal meaning, as they are to provide a basis of comparison between hospitals. An example of this can be shown in the term "average bed cost." Two meanings can be justifiably attached to this term and they are: (1) average occupied bed cost and (2) available bed cost. Conditions under which Victorian public hospitals are subject at the present time, would justify these two different interpretations, because the hospital beds are not occupied to the capacity and the managements have been instructed to hold a certain number of beds unoccupied so as to be prepared for an emergency. As a result, costs will vary considerably according to the meaning that is attached to this term and its use for the purpose of comparison is completely lost. It is obvious that is is essential to have absolute unanimity as regards definition of cost unit basis.

Factors Controlling Cost Units.

To secure a basis of comparison that is useful for different periods of time, only operating costs should be used. Furthermore, when considering in-patients, and out-patients the day-rate costs should be determined separately from the costs of special services. A demarcation should be drawn between the expense of (1) a ward bed and routine service and (2) special services given only to certain patients (e.g., these special services comprise such departments as X-ray and Deep Therapy). By making a demarcation between a ward bed cost and a special services cost the following benefits would be achieved:

1. Complete and real control of the whole (i.e., the hospital), by means of particular control of the various units (i.e., departments).
2. Detailed knowledge is achieved so that tendencies can be better interpreted.
3. Budgeting is made more accurate and can be expected to be closer to future results.
4. Events are related to their functions and effects.
5. Proper relationship between expenses incurred and services accrued is appreciated.
6. Useful should occasions arise for claims for grants for special purposes, because exact costs are available to justify the claims.

Just to enlarge on the first benefit—the management is in a better position to decide when a department should be retained or dispensed with, if it knows the unit costs of that department and compare it with the price of an outside organization.

Types of Cost Units.

The primary factor affecting this subject is to determine what information is required, which resolves to a decision as to which departments provide service to the hospitals and which departments provide service to the patients. Each of these departments has a unit of production, the determination of the cost of which is the purpose of cost accounting. The whole approach to the subject of determining cost units depends on the realization that hospitals are not organized in arbitrary groups described as Provisions, Surgery and Dispensary, Domestics, etc., but are organized in Wards, Departments, Activities and the like, and obviously, if the results are to be capable of intelligent use by the administration, these should form the entities

of account. Expenditure is charged to each of these sections of the organization and it is reduced in each of these accounts to a unit of cost which is determined by the nature of the service. This classification is a matter for decision on practical grounds and does not involve much difficulty.

Accounting as an Aid to the Works Manager in Securing Production

From "Accountancy" (England),

By W. F. EDWARDS.

The real motive power of a factory is labour chiefly that which is termed direct or productive labour. Machines, tools, materials and services must be available, but it is labour which applies or converts these to parts or finished product. Restrictions of space will not permit of a detailed review of this subject. These remarks are deliberately written in a positive form, to provoke thought and discussion.

Accounting can, and does, aid production where the following rules are in force and are adhered to:—

(1) All factory accounting entries must be "built up" to the desired objective punctually, not "lumped" and then analysed or "broken down" when someone has time to do this, often weeks or months afterwards.

(2) The "building up" of all factory accounting entries must be designed to achieve the following objects, in the order stated:—

(a) Daily, weekly or monthly reports.

(b) Monthly costs.

(c) Monthly financial entries for the general ledger.

(3) All costing data must be built up and included in the financial books, and not run side by side with them or, worse still, be a thing apart which is checked with the financial books from time to time with everyone satisfied if the check is "about right" or "not too bad" or perhaps necessitating "digging" into entries which have by then become historical.

(4) The necessary "paper shuffling" must be the minimum practicable; it must be kept on the move and must always follow the needs of the factory and not, as is very often the case, dictate to some extent the factory system and so delay commencement or progress or completion of the manufacture of the product.

With the above as a background and with the right frame of mind and the "will to achieve," the following can be accomplished:—

(5) Daily reports and weekly and monthly summaries of analysis of actual labour hours into (a) direct labour, by product groups and production or expense work orders, and (b) indirect labour, by codes (for maintenance, etc.), or by work order (for tools and major expense jobs).

The works manager and his section heads are vitally interested in these reports—so much so that they may try and work out the

data themselves, but such workings may leave out something or someone and so be a false guide. Even if they are correct there will be double effort, as the accounting department must have this information to form the starting point of all factory costs and to show the trend of direct and indirect labour, and establish the base (direct labour) on which to absorb all overheads or burden, namely manufacturing expense.

(6) Daily reports and weekly and monthly summaries of output from each group or division, in terms of standard hours (or piecework values) and comparison of standard hours with actual hours, as per (5) above. This is necessary to establish the efficiency of the work done in the actual hours, and the bonus due to the direct labour for the extra output.

This presumes measurement of the main output by standard hours; that is, the assigning, by works manager's staff, to each part or product to be manufactured of a value in terms of hours or money. Thus, the machining group or division may be allowed one standard hour for doing a job or assuming the hourly rate of pay be 1/9, the allowance may be expressed as 1/9. The knowledge of how many standard hours are produced in a given number of **actual** hours is vital both to production and to financial control.

As a simple example, assume ten men work in a group for ten hours a day and six days a week, the total actual hours are 600. If in this time they produce 900 parts each valued at one standard hour or a total output of 900 standard hours, their efficiency is 150 per cent. Controversely, if they produce only 480 standard hours, their efficiency would have been only 80 per cent. If 150 per cent can be reached in one week it should continue to be strived for in subsequent weeks—if it continues to be reached the overhead or burden per unit is much reduced, as the fixed portion thereof is spread over more units. If only 80 per cent efficiency is reached there is a serious loss of productive efficiency and, consequently, output, and the works manager will wish to become aware of this at the earliest possible opportunity. The financial controller is also directly interested because a continuance of the low efficiency will result in under-absorption of the total overhead or burden for the period.

The works manager will undoubtedly be aware of certain delays and shortages before he receives the daily report, but to have it presented to him regularly from an unbiased source—the accounting department—and with figures of inefficiency which are expressed or can be expressed in terms of money, means much more than pages of reasons and excuses from the works manager's subordinates.

The standard hour output should be calculated by the accounting department from inspection dockets, which can also form the receiving slips for the next group or division receiving the partly fabricated piece parts or for the passing of the completed piece parts or finished product to the main stores. In this way the docket is a proof of completion of, and the quality of the part and also a movement slip, and most important, a credit docket for the man or group from which it is issued. Finished product inspection dockets should be valued and summarized and the total component parts of the cost (material, labour and burden) credited to these "in process" asset accounts and the total cost debited to finished product asset account.

This is a good example of "building up" the entries necessary for the financial books and providing valuable information to the factory and general management during and immediately after the period concerned.

(7) Weekly reports and monthly summaries of material rejected during manufacture and scrapped or salvaged.

This information is compiled from defective material tags which are made out for parts which do not pass inspection. The material, labour and burden content of the material so rejected can be shown, thus giving the works manager clear advice as to the cost of bad work, and warning of unsatisfactory trends and possible eventual shortages. Like most other facts, these can be built up by the works manager independently of the accounting department; but the latter need the information anyway, and they are far better equipped to organise its collection and presentation to all concerned, and then incorporate the monthly total in their general ledger entries.

(8) Weekly reports of material cost and actual labour hours to date (for comparison with the original estimate of total material cost and labour hours) of special production or expense work orders.

This information is particularly useful if presented currently because "something can be done" about "held up" orders or those showing excessive costs during manufacture. Afterwards the information is historical only and although "inquests" can be held they are usually tiresome and to a great extent unhelpful.

(9) In these times discussions as to how production can be increased take place almost every week and expenditure on expansion programmes and new tools may become necessary. If these schemes are "reduced to writing" by the preparation of a project for approval by the factory and general management, and if the accounting department keep separate records of such expenditure, monthly reports of the status of each project can be circulated and discussed. They serve to direct the works manager's personal attention to "hold-ups" by suppliers or by his own staff, and enable corrective action to be taken. When the project is completed, data is readily available to all concerned of the detailed cost of such work, much of which is of a capital nature and therefore important for future reference.

In many factories the accounting department is considered a nuisance and not able to be of much help, but with this kind of approach and state of mind it can become an extra "right hand" of the works manager and one which he and his staff will very quickly learn to appreciate as being helpful to them and their job of getting output. At the same time this approach is helpful to the general management and enables much interesting and accurate data to be submitted to the board of directors and, most important of all in these times, the increased output which such methods help to secure is of definite benefit to the national cause.

After the reports have yielded all these practical dividends they become, at no extra cost, the basis for accurate accounting and proper financial control.

The demand for output is increasing and the available labour to secure this output is becoming less, and that which is available is temporarily less skilled. This makes it imperative to apply ourselves to get the maximum yield from figures as well as from men and machines, and the regular and

prompt submission of reports can help to obtain all these very important results, with credit to the accounting department and benefit to the works manager in his job of securing the maximum possible output.

Canada Year Book

The publication is announced by the Dominion Bureau of Statistics of the 1943 edition of the Official Handbook "Canada".

Canada 1943, covers the present situation in the Dominion from Atlantic to Pacific, the weight of emphasis being placed on those aspects that are currently of most importance. So far as space permits, all phases of the country's economic organization are dealt with and statistics are brought up to the latest possible date. The text is accompanied by a wealth of illustrative matter that adds to the interest of the subjects treated.

The Introduction reviews Canada's war program, covering the development of her Armed Forces, the financial steps that have been taken, and the governmental organizations that have been created with their principal activities. It also reviews Canada's economic condition at the close of 1942. This introduction is followed by special articles dealing with "Canada's Industrial War Front, 1942," and "Power in Relation to Canadian War Production." The former article treats of the extensive industrial organization that has been developed under the control of the Department of Munitions and Supply for the rapid production of all forms of war munitions.

The chapter material reviews in detail economic conditions under the various headings listed on the following pages. All sections of the Handbook are well illustrated by up-to-date halftone reproductions.

The price of the publication is 25 cents per copy, which charge covers merely the cost of paper and actual press work. The special price concession granted, in the past, to teachers, bona fide students and ministers of religion has been discontinued in view of the necessity for diverting as large a proportion as possible of Dominion funds to the War, and to the fact that, as far as possible, the sales policy of Government publications should be self-sustaining as regards printing materials used.

Applications for copies should be made to the King's Printer, Ottawa, and not to the Dominion Statistician.

Postage stamps are not acceptable, and applications must be accompanied by a postal note or by a coin enclosed between two squares of thin cardboard gummed together at the edges.

The Art of Cost Controlling

By A. J. GAIRNS, F.F.I.A., A.A.I.S., A.C.A.A.

From The Federal Accountant

In order to realize the importance of instituting an effective control of costs, it must be accepted that costs do actually vary. As a matter of fact, one might say that no two costs are ever equal as the factors of material, labour and expense are continually fluctuating. On one occasion the usage of material is slightly higher—on another a labour saving of a few minutes is effected and so on. The cost accountant has overcome (in theory) this factor by setting a standard which he claims is the true cost. This is the estimate, based on past experience with the proviso that past inefficiences shall not be accepted as a yard-stick for the future. In other words, a blending of past experience and the anticipated efficiency for the future is used to determine a standard rating for all further manufacture of the article. Having carefully arrived at this standard, the cost accountant compares his standard production (that is, his factory production figures based on standard cost) with his actual figures for material used, for labour expended and for expense incurred. This comparison provides a test as to the correctness or otherwise of his set standard costs. If the factory production account shows a loss the fact will be proved that the factory failed to attain its estimates and if a gain, that its figures were exceeded.

The cost accountant does not treat these losses or gains as part of the cost. He retains his standard cost as the true cost and regards these variations from standard as an expense in themselves. Some accountants transfer the balance of the variance accounts to the debit or credit of profit and loss account while others show the accumulating balance of the production accounts as a separate entry in the appropriation account. The idea of variance accounts can be carried ad. lib. We can start with a "variance on buying" account, continue with a "variance on issue" account, "variance on labour rates," "variance on labour" costs and so on. These are expenses, distinct from, and kept apart from the true or standard cost. The standard cost is used to determine selling price and any falling off or adding to the profit anticipated by the sale will be brought about by the factory results above on actual manufacture.

The point to be noted at this stage is, that it is vital to control these costs by endeavouring to keep the factory production account balanced and this is not achieved without some effort.

Revision of Costs

In practice, no system of standard costs commences without some initial experimenting and a period of trial and error. Even when in full operation, it is not unlikely that unexpected factors will creep in to upset the figures previously set. A change over from "day" rates to "bonus" rates may be instituted to obtain a better use of manpower. Substitutions of raw materials will be brought about by wartime conditions. These factors may bring about the necessity of a revision of standard costs and this also comes under the heading of cost control. It is not advisable to retain an original standard

cost for all time although the point may be reached when revision is no longer possible. An example of this may be instanced in the fixing of a bonus rate with employees for a certain task on a job. Once the contract on these lines has been signed, it cannot be altered until either the job is superseded by a completely new type or, some other such extraordinary factor intervenes to cause the change. Alterations in the standard cost are then also inadvisable.

Another reason for adequate cost control is that while under a system of standard costs, it is possible to balance the books and prove that standard cost equals actual cost in total, the possibility of certain costs being set high to counteract others which are losses is still uncovered. Many critics might be alarmed to learn of this possibility when their accounts show a fine consistency in results, yet it stands to reason that there must be good and bad jobs when compared with a pre-determined estimate. I am heartily in agreement with those who object to including factory profit or loss on production in cost but to regard the same as a profit or loss item. I do not agree however that this can be done until the standard costs and estimates have been probed to the utmost, to see their relative correctness in each individual case. It should also be seen that this checking process is maintained at all times even after standards have been revised, if only for the reason of providing guidance for the future in regard to new jobs and new quotes.

Budget to Commence

At the beginning of each financial year the control commences with the compilation of a budget of overhead expenses, both factory and administrative. Some authorities believe that this should be calculated only for a period of no more than three or six months, although a year is often attempted mainly for the sake of convenience. Other authorities submit that the budget should be started at least three months before the commencement of the financial year in order firstly, to provide ample time to carefully consider the items and, secondly, to ensure its completion in ample time for its use at the commencement of the year. Many suggestions are made for the flexibility of budgeting which is achieved primarly by the division of the overhead items into fixed, semi-fixed and variable, and allowing a means of altering the latter two classes according to the rises or falls which naturally effect them.

Once compiled, the budget must be rigorously checked with actual expenditure and this control secured over current expense accounts. The field of budgeting extends, of course, also to sales, to finances or to capital expenditure. It can also be applied to any of the day-to-day activities of modern business such as purchasing and stock-in-trade. A ready means of budget control, particularly in regard to overhead costs, can be secured by means of columnar summaries in which the actual expenditure for the week, month or other substituted period is compared with the budget. If this is made up in the form of progressive totals as well, the whole picture is given showing comparisons of the actual expenditure for the period with its relative budget allowance as well as the total incurred to date on the item compared with the total progressive budget figure to date.

At the end of the financial year, a column headed "adjustments" is used

to provide any addition of extras or correction of items over-budgeted. The items thus adjusted are transferred to manufacturing accounts or profit and loss as the case may be. Control is exercised continually during the whole of the year and if, for instance, the factory production accounts show a loss on overhead allowances, one of the possible explanations may be that the budget totals which have been used in compiling the standard costs have been exceeded on actual results. The position can thus be assessed and corrected in due course.

Man and Machine Hours

The expense totals themselves, of course, are not the beginning and end of overhead costs. These must be allocated on some equitable basis firstly to the departments of the business and secondly, if possible, to individual machines. With regard to the departmental classification, factory overheads particularly must be carefully charged in accordance with the services rendered by each. Indirect wages must be spread according to the time spent in each section by foremen, cleaners and non-productives.

There may be considerable difficulty in spreading certain items such as fuel and power but if reasonable care is exercised, a sound basis can be evolved. Once the departmental total is obtained, a rate of charging must be obtained which will best express the true cost of each department. This may be one of the following:—

(a) Rate percentage on direct labour.
(b) Rate per hour of direct labour worker.
(c) Rate per unit such as per gallon or pound of anticipated output.
(d) As a percentage on prime cost.
(e) Machine hour rate.

It is obvious that to set these rates, estimates or budgets must be obtained of the possible machine hours for the period ahead, of the man hours in each department rated accordingly or of the direct wage total if this is the scale used in costs.

The necessity is apparent of seeking control over such vital statistics, and careful records should be kept covering all such working hours. Idle time, excess running, breakdowns, and direct labour increases or decreases should be noted and variations written into the books under the appropriate headings.

Departmental Results

When a firm is losing money, the most important fact is to discover the source or the reason for the loss and, if possible, correct the fault. In the same way, if factory production figures are showing a loss (or a gain) on standard allowances in either material, labour or overhead, it is most important to endeavour to discover its source. Cost control can be extended in this manner by dividing the production accounts into departments and submitting separate figures for each.

It might be said immediately that this is not as easy as it sounds. In most factories, the sequence of work is certainly established to some degree from one department to another, but, on the other hand transfer of partly processed goods to and fro is necessary and a battery of clerks is necessary to record it. Those organizations which can afford such a luxury are to be envied, also those whose layout lends itself to efficient control of transfers.

I have found that, if departments are physically separated under such circumstances that goods inwards and outwards must be recorded for safety's sake, that such are ideal playgrounds for departmentalization. Again departments at the beginning of processing, such as the packing or inspection department, can be easily separated because, by their very nature, such sections must record their inwards and outwards goods.

Once the difficulties of obtaining the requisite information have been overcome, and departmental accounts are available, it should be possible to put a finger immediately on the losing or gaining section and the element of cost concerned. If the drift from the ideal persists, a careful investigation into all the operations of that department is necessary to determine the reason.

Material Control

When the subject of material control is mentioned, the thoughts fly naturally to unit stock control systems familiar in most businesses to-day and certainly essential to any costing system. Included also in a study of this subject are efficient purchasing methods, requisitioning systems, accounts inwards routine and the desirability of periodical stocktakings.

Under the heading of this essay, however, the control of material as far as costs are concerned must cover a much deeper phase of the subject. Assuming that all materials have been received into store correctly and have been stored, requisitioned and issued under proper supervision, any loss recorded in the departmental accounts must be regarded as a matter outside short deliveries, incorrect despatch or such matters as loss in warehousing, etc. It must in fact be due to one or other of the following factors:—

(1) Excess use in production.
(2) Wastage in excess of standard.
(3) Pilfering in factory.
(4) Incorrect allowance on standard cost.
(5) Incorrect stock recorded on standard cost.

This is where a very efficient organization is needed to discover and control such anomalies. The cost accountant must insist on advice in the form of a departmental instruction being sent to him by the factory officials, immediately a change in stock or processing takes place from the standard or estimate previously submitted by the factory. Rigorous methods must be introduced to record and control spoil, scrap and rejects, so that any increase in the rate allowed will be immediately noted and investigated.

It is often found expedient to refer these losses for report to the departmental officials concerned as, often, the cost office will find considerable difficulty in discovering the cause. The co-operation of the factory officials should assist in the solution of the problem, and a thorough investigation of the main items manufactured during the period under review will usually reveal one or more of such lines to be undercosted in respect to material, either because of increased weight or one other of the factors mentioned above. But for the means of control provided under cost accountancy, the slip would probably not have readily been discovered.

Labour Efficiency

Cost control in connection with labour forms a major problem under standard costing and is vital where processes are involved. The manage-

ment of a modern manufacturing concern is satisfied to a great extent if the total production balances with the standards or estimates as a whole. There are however certain recognized shortcomings of this system, for example, certain lines may bemaking up the deficiencies of others which have been "cut fine."

Although control is certainly exercised in obtaining a check in total, this should be extended to seeing as far as possible that each job is considered. The importance of this is seen if only one possible result is quoted—the chance of one customer being dissatisfied owing to a high cost. Additional control in this manner is secured by means of:—

(a) Time and motion studies.
(b) Efficiency ratings.
(c) Comparison of standard with actual times.
(d) Calculation of "actual" costs in certain key lines.
(e) Job card control over certain "hand operated" or repair departments.
(f) Reasonable amendment to quotations before same are constituted as standard costs.

Some of these suggestions may not meet with general approval, particularly the idea of amending a quotation before same is standardized. Admittedly the principle of the quotation becoming the cost is now well established but it is difficult to see the wisdom of making up a standard cost from an estimate which is either over allowed, understated or even incorrect.

At this stage, an example may be given of a line which was recently quoted at 4/- each, but on commencing manufacture was found to be worth only 2/6 allowing the same margin of profit. This was brought about by economies in processing and certain straightout errors in quoting. Under Price Regulations, it was illegal to charge the higher sum and the client was invoiced at 2/6. Naturally the cost was amended to bring it into line with actual results.

Much has been written on time and motion studies as an aid to correct costing and few will dispute the usefulness of this work. Highly skilful technicians are available for time studies and problems of weariness, and skill variation seems to be overcome in formulae which provide a levelling factor to bring the study to a reflection of average conditions and average skill, as well as to include any bonus provision. As a basis for bonus calculations it is invaluable and once fixed by this means, a bonus, or task rate, becomes the standard time and can safely be incorporated in standard costs with only minor adjustments.

Efficiency ratings are very helpful and reflect the degree of attainment to the standards set for each employee. A further extension to the usual single operative rating is to secure a rating on groups of products which will reflect their likelihood of being under or over-costed. If these are also charted in graph form, a pictorial control is available to show progressive results over a chosen period.

Job Card Records

In very many organizations, there is one section devoted to either repair work, "do and charge" work or opertaions of a "hand craft" character.

These are usually rather difficult to supervise in the sense of the control discussed in these pages. Certainly, if quotations are given, it is at least possible to discover whether the quoted times, weights, etc., have been adhered to but problems arise from a control viewpoint when work is simply sent in to be completed and then charged at whatever rate is thought fit.

The corner stone of control is, of course, an efficient and cost-minded foreman who can appreciate the viewpoint of the management. If he is in sympathy with the aims of his executives, he will, on taking up a job, set his men time limits on its completion. Jobs which are repeated are quickly standardized and bonus or task rates set on all work of a repetitive character.

The cost accountant has a problem with this department in costing the productive output, as standards are not available in all cases. A simple job card system will prove of immense value in exercising control and if access is had to the previously set rates on all jobs, an indication is immediately available as to whether the actual cost compiled from the job card is the true cost. Where definite differences are apparent (either gains or losses) the department should only be credited with estimates and the balance either charged to the appropriate variance account or allowed to remain as a debit or credit to the departmental factory production account.

Further advantages from the institution of a job card system in the manner mentioned are the compilation of data relating to "general" time, work on stocktaking, experimental and developmental activities and other indirect factory labour. This data is of vital import to the controlling officials as usually allowances are made in standard costs for such additional work and it is essential to know whether such allowance is justified and if so, to what extent.

Final Booking

A last word may be said regarding control of the final factory operation—the despatch of finished goods to store. This is the crux of the manufacturing activities and any error here is likely not only to throw the productive cost figures out but to destroy any hope of even a start in an efficient store control system. If the store is adjacent to the factory, batches of finished product can simply be handed in to the store and checked and signed for on the spot. It is essential that the store be entirely closed off and no access to it is had by any but the store officials. All differences in the count of goods submitted must be immediately reported to the factory manager and rigorously investigated. If the store is situated away from the factory, I submit that a procedure be adopted similar to that which would apply if the store and factory were two separate firms. A delivery docket should be made out by the factory and signed for by the store after checking. As production is the basis of the whole system, the greatest care is necessary in this final stage.

Enough has been said to indicate the importance of cost control as apart from mere cost-finding. Cost accountancy and factory organization have done wonders in this connection and it is apparent that management is now able to feel the pulse of all factory trends. With control so exercised, the likelihood of error in the delegation of authority is to a great extent mini-

mized as control is still available in a most decided manner. The management, freed from the worries of strange losses of stock, failure to meet client's prices, senseless mistatement of costs and inefficient departmental management, etc., can proceed with the major problems of executive control.

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